AMENDMENTS TO THE CLAIMS

Please add Claims 62-65.

1. (Original) A film deposition station for depositing a film onto a substrate comprising, a first part and a second part for accommodating a semiconductor substrate between them, the first part and the second part positioned opposite each other and parallel to the substrate upon retention of the substrate between the first and second parts, wherein the first part and the second part are configured to be spaced less than about 2 mm from a major surface of a substrate accommodated between them, wherein at least one of the parts is provided with a heater for heating that part, and wherein each part is provided with a set of gas supply channels connected to a source of gas, wherein the source of gas for the first part is configured to supply mutually reactive reactants in a sequence of alternating, separated pulses for atomic layer deposition (ALD).

2. (Original) The film deposition station of Claim 1, wherein each set of gas supply channels comprises a plurality of horizontal gas dispersion channels connected to a plurality of vertical gas injection channels, the plurality of horizontal gas dispersion channels providing gas to the plurality of vertical gas injection channels, wherein the plurality of vertical gas injection channels are configured to discharge gas onto a major surface of the substrate.

3. (Original) The film deposition station of Claim 2, wherein the horizontal gas dispersion channels have a larger cross-sectional area than the vertical gas injection channels.

4. (Original) The film deposition station of Claim 3, wherein the horizontal gas dispersion channels each have a diameter of about 3-5 mm and the vertical gas injection channels each have a diameter of about 1-3 mm.

5. (Original) The film deposition station of Claim 2, wherein the vertical gas injection channels each comprise a first and a second section, wherein the first section opens to one of the plurality of horizontal gas dispersion channels and has a larger cross-sectional area than the second section, wherein the second section opens to a space for accommodating the substrate.

6. (Original) The film deposition station of Claim 2, wherein the vertical gas injection channels are positioned to extend uniformly across an entire major surface of the substrate.

7. (Original) The film deposition station of Claim 2, wherein the horizontal gas dispersion channels extend radially across an interior of the first and the second parts.

8. (Original) The film deposition station of Claim 1, wherein the mutually reactive reactants are supplied through the first part, wherein the first part comprises a set of separated gas supply channels for each reactant, wherein the sets of separated gas supply channels are vertically and horizontally displaced relative to one another.

9. (Original) The film deposition station of Claim 1, wherein the gas supply channels are configured to discharge gas to fully support the substrate between the first part and the second part.

10. (Original) The film deposition station of Claim 1, wherein one of the parts is configured to be at a higher temperature than the other one of the parts, wherein the film deposition station is configured to supply the reactants in alternating, separated pulses from the one of the parts that is at a higher temperature.

11. (Original) The film deposition station of Claim 1, wherein one of the parts is configured to be at a lower temperature than the other one of the parts, wherein the film deposition station is configured to supply the reactants in alternating, separated pulses from the one of the parts that is at a lower temperature.

12. (Original) The film deposition station of Claim 1, wherein the first part and the second part are configured to be spaced less than about 1 mm from a major surface of a substrate.

13. (Original) The film deposition station of Claim 12, wherein the first part and the second part are configured to be spaced less than about 0.5 mm from a major surface of a substrate.

14. (Original) The film deposition station of Claim 1, wherein the gas supply channels are configured to cause rotation of the substrate.

15. (Original) A reactor for semiconductor processing, comprising:

an upper reactor block and a lower reactor block for accommodating a semiconductor substrate therebetween,

wherein the upper and the lower reactor blocks are configured to be less than about 2 mm from a major surface of the substrate when the substrate is retained therebetween, and wherein the reactor is configured to discharge mutually reactive reactants from at least one of the reactor blocks to the substrate in sequential alternating,

separated pulses, wherein the at least one of the reactor blocks comprises a set of gas channels configured to transport and discharge the sequential alternating separated pulses of reactant to the substrate.

16. (Original) The reactor of Claim 15, wherein the upper and the lower reactor blocks are configured to be heated to temperatures at which condensation or decomposition of the mutually reactive reactants is substantially prevented.

17. (Original) The reactor of Claim 16, wherein the upper and lower reactor blocks are configured to be heated to different temperatures.

18. (Original) The reactor of Claim 17, wherein the upper and the lower reactor blocks are configured to heat the substrate to a different temperature during each pulse.

19. (Original) The reactor of Claim 15, wherein the lower block is vertically movable relative to the upper block to allow for decreasing and increasing the distance between the substrate and the reactor blocks for loading and unloading of the substrate.

20. (Original) The reactor of Claim 15, wherein the upper block is configured to be at a lower temperature than the lower block, further comprising a removable shield attached to the lower block, wherein the reactor is configured to concentrate deposition of the at least two mutually reactive reactants on the removable shield relative to other surfaces of the reactor.

21. (Original) The reactor of Claim 20, wherein the removable heat shield is configured to be heated to the same temperature as the lower block.

22. (Original) The reactor of Claim 15, wherein the upper and the lower reactor blocks are configured to be less than about 1 mm from a major surface of the substrate.

23-54. (Cancelled).

55. (Original) A film deposition station for depositing a film onto a substrate, comprising:

a first part and a second part for accommodating a semiconductor substrate between them, the first part and the second part positioned opposite each other and parallel to the substrate upon retention of the substrate between the first and second parts, wherein the first part is provided with a first set of gas supply channels connected to a source for a first reactant and a second set of gas supply channels connected to a source for a second reactant, wherein the first and second set of gas supply channels are configured to keep the reactants separated until discharging the reactants out from the gas

supply channels to the substrate, wherein the first and the second reactant are mutually reactive; and

controls to supply the first and the second reactant from the source for a first reactant and from the source for a second reactant in sequential alternating separated pulses for atomic layer deposition (ALD).

56. (Original) The film deposition station of Claim 55, wherein at least one of the parts is provided with a heater.

57. (Original) The film deposition station of Claim 55, wherein each set of gas supply channels comprises a plurality of horizontal gas dispersion channels connected to a plurality of vertical gas injection channels, the plurality of horizontal gas dispersion channels providing gas to the plurality of vertical gas injection channels, wherein the plurality of vertical gas injection channels are configured to discharge gas onto a major surface of the substrate.

58. (Original) The film deposition station of Claim 57, wherein the horizontal gas dispersion channels for one set of gas supply channels are horizontally displaced relative to the horizontal gas dispersion channels for the other set.

59. (Original) The film deposition station of Claim 57, wherein the horizontal gas dispersion channels for one set of gas supply channels are vertically displaced relative to the horizontal gas dispersion channels for the other set.

60. (Original) The film deposition station of Claim 55, wherein the second part is provided with a set of gas supply channels to discharge gas onto a second major surface of the substrate, opposite to the major surface.

61. (Original) The film deposition station of Claim 55, wherein the first and the second part are configured to be spaced less than about 2 mm from a major surface of the substrate accommodated between them.

62. (New) The film deposition station of Claim 55, wherein the first and the second parts are configured to repeatedly cycle between a relatively high temperature during pulses of one of the first and second reactants and a relatively low temperature during pulses of the other of the first and second reactants.

63. (New) The film deposition station of Claim 62, configured to alter a distance between the substrate and the first and the second parts while cycling between the relatively high temperature and the relatively low temperature.

64. (New) The film deposition station of Claim 62, configured to alter a thermal conductivity of gas between the substrate and the first and the second parts while cycling between the relatively high temperature and the relatively low temperature.

65. (New) The film deposition station of Claim 55, configured to maintain the first and the second parts at temperatures at which condensation or decomposition of the mutually reactive reactants is substantially prevented, while heating the substrate to one or more temperatures at which composition or deposition of the mutually reactive reactants occurs.